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ABSTRACT

This document is the first in a multi-document final report on the Multi-Disciplinary Program in Educational Research conducted at the University of Pittsburgh, September 1972 to August 1974. Part one of this document gives a brief overview of the entire final report, describing the three products emerging from the program (student growth, development of processes, and the program materials themselves). Document output consists of an historical documentation of the program, discussions on quantification as language (with accompanying exercises), qualitative methodology, the relationship between qualitative and quantitative research, a longitudinal methodology (panel analysis), a case study of an organizational reform effort, a study of questions concerning frame of reference problems, essays on the history of interdisciplinarity, approaches to policy making and evaluation, and a summative evaluation of the entire program. Part two of the document describes the conceptualization of the program as a method for bringing faculty and students in the behavioral and social sciences together around a shared interest in educational problems, the organizational procedures, the conduct of the program in its first two years, and its redesign to provide materials for possible program replication in the future without duplication of effort or expense. (MB)

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The Multi-Disciplinary Graduate Program in Educational Research

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LEARNING RESEARCH AND DEVELOPMENT CENTER

UNIVERSITY OF PITTSBURGH

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FINAL REPORT OF THE MULTIDISCIPLINARY GRADUATE PROGRAM IN EDUCATIONAL RESEARCH

This final report for the Multidisciplinary Graduate Program in Educational Research contains materials which were prepared for our program. The program was conducted from September 1, 1972 until August 31, 1974, at which time student support was terminated. The program itself emphasized and utilized processes for training graduate students. Various materials were prepared, however, for our own use and are included in this report. Some of these materials represent the production of new knowledge. This new knowledge, which was pursued during the course of conducting our program, would be appropriate instructional material for others undertaking multidisciplinary graduate programs. Although we intentionally focussed on educational research and consequently, have used educational problems as examples, the use of these materials need not be restricted to programs for educational researchers.

The Multidisciplinary Graduate Program resulted in products at three levels. The students themselves who were the participants in the processes, and both recipients of and contributors to the knowledge generated, are the ultimate products. In the long run, the success of a graduate program can only be assessed in terms of its influence on students' development and their future professional effort. At a second level, there is a product which consists of the program processes used and experience gained that can be transmitted to others so that the effective strategies can be simulated. A graduate program may be considered a social experiment. Decisions made during the planning and conduct of the program have consequences, some of which cannot be anticipated at the time of decision-making but can in

retrospect be analyzed. The documentation of the decisions which we made and our experiences that followed may be used as a guideline for others in their design and decision-making. During the conduct of our new program, there were experiences that our students were receiving that would either be difficult or expensive to replicate. Some bodies of knowledge that we considered relevant had not been produced so we could not transmit it to our students but, rather, had to develop it concomitantly. These knowledge products are being more fully developed for eventual publication and use by others. These products can then serve as a means for transmitting knowledge with a resulting decrease in the expertise, effort and support which would be required.

The materials which we are including in this final report are categorized by type and function.

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D. Evaluation of the Multidisciplinary Program in Educational Research

Each of the above served specific functions for our program and were developed to serve the needs that we had.

A. The Historical Description of the Multidisciplinary Graduate Program in Educational Research, University of Pittsburgh: Although support for further programs of this type has been discontinued, a record of the decisions which we made and the processes which were tried could be used by others in developing and conducting a program of this type. The document reflects a type of formative evaluation that sensitizes the developer to decision-making and the consequences of prior decisions on courses of action.

B. Knowledge-producing Activities

1. Methodological

a. A Methodological Trilogy:

The following three units are meant to be used sequentially by all students but emphasis should be placed on whichever

units are most needed by the individual student. For example, the Quantification as Language Exercises may be redundant for students with expertise in quantification, but a major area of concentration for those doing qualitative research.

Quantification as Language, written by Paul F. Lazarsfeld with the accompanying exercise units prepared by David Ford, was designed for students who are professionally trained and oriented toward qualitative methodologies. Our experience with students from various social and behavioral sciences revealed that students tend to specialize in either qualitative or quantitative methodologies. These materials were specifically prepared to enable students trained in qualitative approaches to read intelligently the research results of their colleagues who use quantitative methodologies. In order for these students to read quantified tables and make use of the research of others, it was necessary to provide instructional units. These materials have been used with our students and revised to meet their needs. They have been piloted-tested in a graduate course in the sociology department and are currently in use in the Graduate School of Social Work.

Although we expect that the utility of these materials is not restricted to programs in educational research, wherever possible, we used educational research data. This served the additional function of exposing our students to relevant educational problems and the knowledge gained from this research.

Qualitative Methodology: This paper, written by Alice Troup, a student from the anthropology department under the direction of Paul Lazarsfeld, will require further revisions before it is ready for publication. It is an attempt to identify and codify the processes in qualitative methodology so that it can be taught in a more systematic way and appreciated by those who have a professional preference for alternative methodologies. Although qualitative methodologies have been used by many noted scholars, the processes have not been clearly explicated. During the conduct of our program, students using quantitative methodologies recognized the benefits of interacting with their peers who used and referred to qualitative studies. The concepts and hypotheses generated through qualitiative approaches can be used profitably as bases for further quantified research. In order to encourage persons using formal or quantified methods to seriously consider the findings of qualitative research, it seemed necessary to explicate the processes in order to engender respect for this methodology. Further effort is required to improve the organization of the qualitative section. This section has been given to experts in qualitative methodology and follow up interviews have been conducted to elicit suggestions and criticisms. Even in this rough draft stage, however, the response has been enthusiastic as the need for such an analysis is well-recognized.

An Example of a Relationship Between Qualitative and Quantitative Research: "Reason Analysis"

Instructional materials on reason analysis were prepared to illustrate how qualitative and quantitative methodologies can converge in a single methodology. This is the first of the examples that may be offered. It is planned to add others before preparing for future publication.

b. A longitudinal methodology: Panel Analysis

The need for a longitudinal methodology that could be used effectively in educational research was brought to our attention during a visit to the National Institute of Education and through a request for proposal. Panel analysis seemed to be an appropriate longitudinal methodology. Jiri Nehnevajsa, Professor of Sociology at the University of Pittsburgh, translated his paper, "Elements of Panel Analysis" from the original German for use in our program. Ann Pasanella undertook the application of panel analysis to extensive educational data and prepared a methodological unit for the program. This accomplished both original educational research and the development of an instructional unit.

c. A case study of an educational reform effort.

Carolyn Persell's study, "The Utilization of Sociological Ideas in Organizational Planning" is a case study which provided our students with substantive information on the role of sociologists in the American Educational Research Association. It introduced our students as they became

interested in careers in educational research, to a professional organization and new reference group as well as to case studies as one type of qualitative methodology.

2. The Frame of Reference Study

The materials provided in this report describe the purpose and the procedures used for conducting this study within the context of our program. The methodology and the interview check sheets developed by this study group will be included in the final product to be disseminated. It would be possible for others to use these materials to interview experts of their own choice and thereby replicate the active mode of instruction which we used for our students.

This does, however, require extensive effort on the part of those being interviewed as well as those conducting the interviews. The objectives of these units could be mastered by reading the accounts and analyses of our interviews. For this reason, we are continuing the analysis of the data collected in our interviews and will prepare the entire study for publication as a separate entity.

Although this study was designed for a multidisciplinary program, the problems that it addresses are not restricted to issues that come up only in such programs. Differences in reference frames occur within a single discipline; research that is problem-centered requires that we utilize research results pursued by persons with a variety of reference frames. We anticipate, therefore, that this study will be useful more generally in graduate education and especially helpful when the application of knowledge to complex social problems is attempted.

C. Essays

1. An essay; Notes on the History of Interdisciplinarity:

This essay, written by Judy Rosen, a graduate student participant in our program from the history department, reflects her research on the development of disciplines and subsequent attempts to bridge the barriers which resulted. Paul F. Lazarsfeld directed her research, which was initiated in order to put programs such as ours in perspective and to benefit from the analysis of what had been attempted by others.

2. An essay on Policy-Making; Alternative Approaches to Policy-Making: Exploration of Rational and Incremental Approaches to Policy, Their Administrative Traditions and Areas of Controversy:

This essay was written by a graduate student specifically to meet a need of our program. During the first year of our program, the discipline of political science was not represented. Because students undertaking educational research will inevitably have to interact directly or indirectly with policy-makers and organizations, we wanted to introduce them to policy science issues. This essay was not written for publication but was a supervised analysis of the literature undertaken for the instruction of our students. This proved a practical solution for filling the gap created in a multidisciplinary program when a specific discipline is not represented in the seminar discussions.

3. An Essay on Evaluation:

We wanted to develop <u>new approaches</u> to the evaluation of graduate education and for this purpose established an evaluative

study group to be comprised of philosophers, literary critics and sociologists of knowledge as well as those professionally engaged in educational evaluation. One of our students was assigned to this group and his research, directed by Paul Lazarsfeld, was to pursue evaluative issues that arose during the meetings of this group. The program was terminated before the approaches to evaluation could be synthesized and applied to our specific program. The essay by Todd Simonds is the result of his directed research. Interest was generated among the university administrators at the University of Pittsburgh responsible for the academic programs. It is the intention of the Associate Provost to continue this evaluative research. Evaluation was specifically selected as an educational topic that could broaden the disciplines represented in our program to include the humanities.

D. Evaluation of the Multidisciplinary Program in Educational Research

The traditional evaluative methods for instructional programs that use pre-and post-tests to assess the effectiveness of the program in meeting prespecified objectives seemed inadequate for a complex graduate program. Although the program had general objectives in common for all students, the experiences that they shared would be meaningful to them in different ways and student outcome goals would depend heavily on the past experiences, frame of reference, theory and methodology that each student has as he or she entered the program.

Each specific objective was less important than the balance and relationship between the variety of experiences available for the student. Although we had identified fundamental problems involving methodology and reference frames which we believe must be directly addressed in a multidisciplinary graduate program, students at that level of higher education should be self-directed and able to create their own structure for acquiring and utilizing skills and knowledge useful in their own professional careers. A concurrent evaluation was undertaken while the program was being conducted and focussed interviews were used at the conclusion of the program to obtain participant reactions to various components.

The Multi Disciplinary Graduate Program in Educational Research: An Historical Description

A. The Conceptualization Phase.

The Multi Disciplinary Program in Educational Research was first conceived by the co-directors of LRDC as a means for bringing faculty members and graduate students from the behavioral and social sciences together around a shared interest in education. It was recognized that the departmental structure of academia tended to isolate these people from one another and from those already bringing their disciplines to bear on educational problems. Because LRDC was itself an organization with faculty from the Division of Arts and Science and the School of Education who were conducting basic research and developing educational innovations, it seemed appropriate to make the Center more broadly available as a resource to others who wished to apply their disciplines to educational problems.

The initiative was taken by the Center leaders who discussed the possibility of creating a graduate program in educational research with faculty members, departmental chairmen and appropriate deans. The enthusiastic response among the faculty suggested that such a program would fill a significant need. An announcement of a meeting was sent to the departmental chairpersons and faculty members who had shown an interest.

Twenty-three interested faculty members met on February 1, 1972 to discuss the proposed program. Glaser, as co-director of LRDC, began by discussing LRDC and its general goals. The Center was described as an organization committed to educational research in which faculty, staff and graduate students bring their expertise collaboratively to bear on

educational problems. Glaser envisioned an exemplary program of graduate study in which graduate students from a variety of relevant disciplines were "socialized" into the discipline of education. Essentially they wanted faculty and graduate students whose disciplinary backgrounds would allow them to view education as a phenomenon from various perspectives. LRDC would be a university resource that they could use in order to become involved in research on educational problems.

Cooley, as a co-director of LRDC, suggested that a strategy for defining the goals and boundaries of the proposed program might be for participants to suggest specific ideas or goals. Discussion could then ensue about the appropriateness of these suggestions until the criteria were clarified and consensus reached.

During the discussion which followed it became clear that consensus was developing around several significant dimensions.

(1) The faculty and graduate students that would be candidates for the program should not be constrained to conduct research on prob ems already articulated by LRDC or within the domain of the Center's mission involving elementary education.

(2) The research problems need not be oriented toward direct pay off for the educational system. Research on topics such as the "processes of planning" that might generate new knowledge rather than immediate problem resolution would be acceptable.

(3) The program would stress breaking down the barriers between disciplines that prevent collaboration because of differences

in the frame of reference and language utilized.

(4) There would be a need to develop strategies for producing intellectual coordination and group cohesiveness so that students and faculty would benefit from peer relationships.

(5) The program should be problem-oriented and not merely seminars to exchange knowledge.

(6) The participants and the university must be committed to the program as an alternative and legitimate structure for graduate education.

Ian Mitroff, who had a joint appointment in the School of Business and Information Sciences and was a member of the Philosophy of Science Center, became a spokesman for the interested faculty. His own graduate education at the University of California, Berkeley had been pursued within an interdisciplinary program conducted by C. West Churchman. Mitroff was recruited by Glaser and Cooley as the program director and Evelyn Fisher, a sociologist who was then a member of the Center staff became his assistant.

A steering committee of ten members was established to plan the program and recruit participants. The discussion centered around whether or not a common object of study such as an LRDC program would create unity. The common object would have to be described in order for faculty and students to know whether they were interested in and could define a researchable problem on the basis of their expertise applied to this topic. The description of the object itself might introduce a bias and constrain the contributions that people from various disciplines might make. Furthermore, it was considered doubtful that students of high academic

standing would be attracted if this constraint was placed on their doctoral research.

It was decided, as a consequence, that the steering committee would announce the program and elicit proposals on problems as defined by interested students and faculty. The proposals would then be reviewed with the following criteria employed for selection of candidates:

(a) The quality of the proposal itself.

(b) The relevance for the field of education.

(c) The originality of the proposal within the constraints of 1 and 2.

(d) The academic strength of the student.

(e) The level of the student in his graduate program. Although advanced graduates, who were firmly grounded in their own discipline were preferred for the most part, a few less advanced students were selected deliberately. The rationale for this decision was to build into this experimental program, a pilot test of the receptivity and effectiveness of the multi-disciplinary experience on students according to stages in their professional career preparation.

(f) The thematic fit between the proposals. While it was considered undesirable to impose a set topic and hence preclude those topics that were of interest to the participants, it was recognized that the effectiveness of the program required strong potential relationships around the focused problems These problems must also relate to the Center's activities or interests in order for the maximum use to be made of the Center as a university resource that could get the disciplines meaningfully involved in educational problems and issues.

(g) The competency and interest of the sponsoring faculty member for actively engaging in an educational research and development training program.

B. The Conduct of the Program During the First Two Academic Terms.

The Multi Disciplinary Graduate Program in Educational Research began with a set of very ambitious goals and a design for processes that would allow goal attainment. These goals were (1) to encourage the effective application of a wide variety of disciplines and approaches to the formulation of and attach on important educational problems (2) to encourage a long-time commitment on the part of the students and faculty to interdisciplinary research and development on educational problems (3) to break down the artificial barriers between disciplines which prevent the focus on educational problems that cut across disciplines (4) to develop a model for the development and management of other interdisciplinary training programs (5) to develop prototype materials as instructional units and for the evaluation of such programs.

Twenty students were selected to begin the program in September, 1972. The enthusiasm among both students and faculty was such that seminars began during the summer for those who were on campus in spite of the fact that student stipends would not begin until the fall term. The director and assistant director began planning the formal program itself and prepared a report of the rationale for the program.

The program began formally in September, 1972 with weekly seminars. Each student presented his or her research design and the methodology to be used. Discussions were conducted to explicate the assumptions underlying the problem definition, theoretical orientation and methodological approach. As the students progressed to the data collection stage, Evelyn Fisher assisted with locating and arranging access to the appropriate sites and subjects. Minimal support services were offered for the research

project itself where necessary.

Interspersed with the regular student reports were seminars by guest speakers. The faculty members of LRDC and the departments of the university were frequent guests, both as speakers and participants. Occasionally, guest speakers from outside the university were invited to talk on a significant piece of research that they had done and more generally on their conceptual and methodological approaches to educational research. The guest lecturers were questioned and challenged to explicate and explain their underlying assumptions and research decisions in the same way that students were when they made their presentations to the group. Many of these quest speakers found this experience intellectually stimulating and a rigorous exercise quite unlike traditional seminars or lectures. Although the speaker was respected as a person and as an expert in his field, his research design, methodology, theoretical constructs, etc. could be challenged, supported or opposed by any of the representatives of the disciplines involved in the program. For the students, the requirement of presenting research designs , proposed methods and progress reports to an audience of persons from diverse disciplines did have the effect of encouraging them to explicate the conceptual framework and heightened their awareness of the methodological and espistemological decisions underlying their research.

Students were introduced to literature in other fields that was relevant to their own research by their peers and faculty from other departments. Students registered for courses in other departments, sought and offered tutorials with one another. Their repertoire of theories, methodologies and skills on which they could draw increased.

Collaboration by students, however, tended to be in terms of assistance to one another rather than a redefinition of the problem of co-research.

It was recognized that students who had received the approval of their departmental committee and had been accepted into the Multi-disciplinary Program on the basis of their research topic and proposal, were unlikely to abandon it in favor of a new problem recognized as more important to the educational field. Although overviews of problem areas of crucial concern to the educational system were offered by Raymond Hummel as a staff member of the Multidisciplinary Program, it was found that involvement in educational research grew more readily from the actual research problem that the student had selected. There was a willingness to expand the problem or the methods used, to modify the problem or to relate it to larger issues, but not to change topics radically. Whether the overviews of educational problems and issues will become useful in the future as students complete their doctoral theses and pursue new research problems remains unknown. Undoubtedly the opportunity structures for research will play a major role.

The enthusiastic involvement of students in educational research was quite obviously centered on their own problem. The challenges that students received to defend their designs and methodologies and to broaden them by contributions from other disciplines were seen by the participants as exciting opportunities for intellectual growth. Faculty participants as well as students found that explicating the theoretical frameworks, theories and methodologies for persons of other disciplines developed their own understanding of the strengths and weaknesses within their own discipline.

C. The Redesign of the Program.

By the end of the second academic term, it was evident that the students had become a cohesive group with the exception of a few who remained rather on the periphery. Their lack of integration into the group appeared to be a consequence of the advanced stage of their own research and the time constraints during the period of dissertation writing. The seminars provided a format for lively intellectual discussions which were often followed up by continued interaction and assistance among participants. There was, however, growing concern among the program staff and steering committee about the need to analyze and formalize the processes so that they could be replicated elsewhere. Paul Lazarsfeld, who had been a member of the steering committee took over the directorship of the program.

Lazarsfeld recognized that the program was dependent upon the expertise and breadth of experience of the director and participants. If the program was to be replicated elsewhere, a less-experienced director might require instructional materials as a substitute for personal knowledge and skills.

It was decided to examine the fundamental requirements for the conduct of a Multidisciplinary Program and to develop materials that were not available in the cumulative literature of the various disciplines.

There were two distinct categories of instructional materials that were not available but would have to be produced by our program if the experiences were to be replicable. The first were materials on frames of reference. In order for students in a Multidisciplinary Program or professionals in multidisciplinary organizations to collaborate and cooperate with persons who have frames of reference which differ from

their own, it is necessary that they become aware of and tolerant toward alternative reference frames. This is a prerequisite to utilizing the concepts, theories and research results of others without distorting them as they are translated from one reference frame to another. It was decided that a scientific study of professional frames of reference would be undertaken by Burkart Holzner, the Chairman of the Sociology Department, and Ian Mitroff. This study would be conducted during the second year of the program with the students of the program as an audience for the interviews with experts. These interviews would be designed to explicate extremely different though relevant frames of reference for the conduct of social inquiry. The students would then be participants in the data collection processes. The materials that would be prepared on the basis of this study could then be published and utilized as instructional components for future programs. Although it would be impossible to explicate an exhaustive list of alternative frames of reference that would be relevant to educational research, the exposure to a carefully selected sample of these would point out the differences that exist. The effects that these reference frames have on how problems are defined, research conducted, data analyzed, knowledge produced and truth tests employed, would be revealed.

The second category of needed materials were methodological units. In each of the behavioral and social science disciplines there tends to be a division between those who utilize qualitative methodology and those who use quantitative methodology. This division is so pronounced that what appeared necessary was to produce a unit that would explicate the fundamentals of qualitative methodology for those who had a preference

or training in quantified research methodology, a unit that would make quantified research materials intelligible to qualitative researchers and a unit on the relationships between the two. It was decided that Paul Lazarsfeld would assume the responsibility for the development of these units.

In order to acquire the needed research staff to adequately develop these two categories of new materials, it was decided that the new students coming into the program in the second year to replace those who had completed their doctoral theses or who had left the university and therefore withdrawn from the program would be offered graduate research assistantships. Rather than solicit proposals for research as a basis of student selection, students recommended by their departments as being of high academic standing and interested in doing directed research were screened.

One student, Todd Simonds, from the Sociology Department was selected and Charles Teggatz, from Philosophy, to assist Holzner and Mitroff. This task group was enlarged by the volunteered efforts of Charles Penoi, a student from the first year, Evelyn Fisher, who was now the Associate Director of the Multidisciplinary Program and was handling program administration, and Leslie Salmon-Cox, a sociologist employed by the LRDC.

Lazarsfeld recruited one graduate research assistant, Alice Troup, from the Anthropology Department and transferred an advanced sociology student, David Ford, to a full-time staff position. Alice Troup was assigned to do research on the Qualitative Unit and David Ford was assigned to work on the Quantitative Unit and the relationship between the two approaches.

These graduate research assistants participated actively in the entire program but conducted assigned and directed research rather than doctoral research of their own. They were responsible to the Multi-disciplinary faculty members rather than to departmental advisors.

In addition, Lazarsfeld introduced the concept of "service to the community" for all students who participated in the second year of the program. Those who were continuing to conduct their own doctoral research were designated research fellows to differentiate their role from the new graduate research assistants. Each research fellow was required to undertake some task that served the needs of the program and its participants. Some of these service tasks were to give a lecture or prepare a paper on a topic relevant to a need reflected in a seminar. Others were to do a specific but limited task for one of the materials production groups.

Lazarsfeld assigned to a graduate research assistant, Judy Rosen, from the History Department, the task of reviewing the literature and writing an historical essay on the development of disciplines and the attempts to bridge the divisions that were subsequently created. This research was conducted under Lazarsfeld's supervision and was designed to meet the need of putting multidisciplinary or interdisciplinary programs into historical and intellectual perspective.

The program had not attracted candidates from the Political Science discipline although a number of participants had a minor in this field. Merlyn Kettering from the Graduate School of Public and International Affairs was given a graduate research assistantship and was assigned to write an essay on policy-making. His essay and his participation in the

seminars would meet the need of having a representative with this perspective.

Lazarsfeld wanted to supplement the evaluation that was being done through the pilot-testing of the materials which were being developed, professional peer review and student reactions. It was his intention to develop a new evaluative methodology for assessing a complex program of this type. For this reason, he established a group of persons who could bring together humanistic evaluation and more traditionally employed measures of objective evaluation. Philosophy and literary criticism would be related to evaluation of social programs and educational objectives. The interest of the university administration and faculty were aroused by his concept of a new evaluative methodology for graduate programs. Although the program's termination made the actual conduct of this evaluation impossible in this concrete instance, this idea has been considered as worth pursuing for the university itself and as such is a project that was initiated by the Multidisciplinary Program.

The regular seminars and student research were continued through August 31, 1974 when the program was officially terminated. Prior to the conclusion of the program, students completed evaluation forms and focussed interviews were conducted to evaluate the program from the perspective of the participants.

Staff members and several of the graduate research assistants were retained through December, 1974 in order to complete the production of the materials. These materials which were designed as related components for a Multidisciplinary Program may be used as independent instructional materials in more traditional educational structures. The evaluation and consequent suggestions for future multidisciplinary programs in educational

research have been completed. Although the sponsorship and support for these training programs has now been terminated by the National Institute of Education documentation will permit our experiences to be utilized in the future or adapted to new opportunity structures.